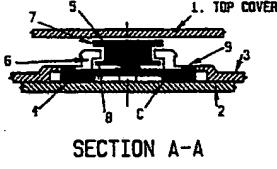
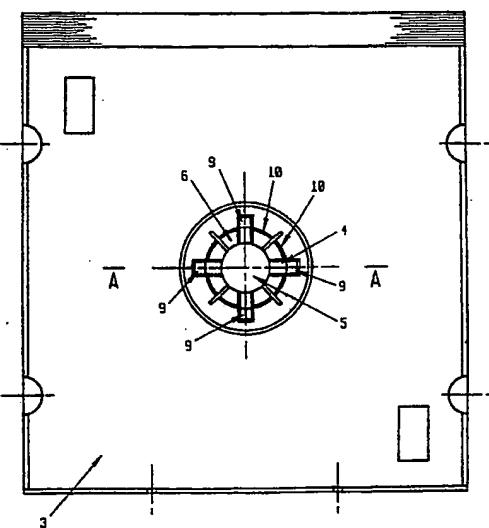




INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁵ : G11B 33/04, B65D 85/57		A1	(11) International Publication Number: WO 93/01598 (43) International Publication Date: 21 January 1993 (21.01.93)
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(81) Designated States: AU, BB, BG, BR, CA, CS, FI, HU, JP, KP, KR, LK, MG, MN, MW, NO, PL, RO, RU, SD, US, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, MC, NL, SE).			
(54) Title: COMPACT DISC (CD) INSERT-RELEASE SYSTEM			
(57) Abstract <p>A system for inserting a compact disc (CD) into a storage tray (3) and for performing instant pop up of the CD over the clamps (6) by pressing a release button (5). By using this system the CD is protected against damage that might be done to the CD during the process of taking the CD out from the storage tray (3).</p>			
 SECTION A-A			
			

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Title of invention: COMPACT DISC (CD) INSERT - RELEASE SYSTEM.

The invention is described in the following statement;

The compact disc named (CD) is known as a device used to store data on it with a hole (K) in a centre. -(refer to FIG.1)

5 The CD insert - release system is designed to protect the CD against damage done to the CD by bending the CD or scratching on the active side of the CD during the process of taking the CD out from a storage tray.

10 The present invention provides simple operation to insert the CD into the storage tray and also provides instant pop up of the CD over the clamps by pressing a button.

The principle feature of the present system is the function of the release button (5) which is placed in the centre of the stored CD.

To assist with the understanding of the invention refer to the drawings:

15 FIG.1 shows CD basic properties.
FIG.2, FIG.3 shows release button and spring.
FIG.4, FIG.5 and FIG.6 shows examples of the CD insert-release system function principles.
FIG.7 shows diagram of operation sequences.
20 FIG.8 accompanying the abstract

The RELEASE BUTTON (5) when pressed is arranged to activate all arms of a spring (4) and then to release the detents (10) located on the clamps (6). -(refer to FIG.2 and FIG.4)

25 The SPRING (4) is designed to remain with no tension during the storage period. The arms of spring having push out projections (9) on each arm where the total number of the projections is 3(three) or more. -(refer to FIG.3)

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The PROJECTIONS (9) are integrated with the spring (4) and are engaged to pop up the CD over the clamps (6). The top surface of all the projections (9) are used also as the storage place for the CD during the storage period. -(refer to FIG.4)

5 The CLAMPS (6) are integrated with the storage tray (3) and are engaged to keep the CD firmly in the storage position. -(refer to FIG.4)

The STORAGE TRAY (3) comprise the clamps (6) and is permanently placed in a storage box (2). -(refer to FIG.3)

10 The DETENTS (10) are engaged to arrest the CD and are integrated with the clamps (6) where the total number of detents is 3(three) or more. - (refer to FIG.4)

The release button (5), the spring (4), the storage tray (3) with the clamps (6) and the detents (10) all may be made of any suitable material, such as moulded plastic or metal.

15 Referring to FIG. 2 and FIG.3 it can be seen that the release button (5) and the spring (4) can be manufactured as separate parts. The lower enlarged end (8) of the release button (5) is designed to be clicked in, and permanently held in the center of all clamps (6).

20 The pivoting points labelled (C) are located on each spring arm with an empirically defined equal distance from the centre of the spring (4) to suit required tension in spring based on material properties.

Referring to FIG.4 it can be seen that the CD is in storage position. Also it can be seen that the gap labelled (D) is designed to provide relevant tension in the spring (4) after the button (5) has been pressed down as much as is necessary to pop up the CD over the clamps by the projection pins (9). The gap labelled (E) is designed to provide space for total movement of the release button (5) to come down. The gap labelled (G) is provided to keep clearance between the storage tray and the active side of the CD during the storage period.

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The gap labelled (F) between the release button (5) and all of the clamps (6) is designed to perform concentric movement of all the clamps (6) required for both major operations; one to put the CD in storage position and another is to release all detents (10). For smooth operation purpose the chamfer labelled (B) is provided on each clamp (6).

Referring to FIG.5 it can be seen that the CD is out of clamped position. Also it can be seen that the location of all the top surface of the projections (9) are defined as the area with no bigger diameter than the standard core area (L) free of recorded data on the CD.

10 - (refer to FIG.1 and FIG.5).

Referring to FIG.6 it can be seen that the shape and the size of the core hole labelled (H) in storage tray (3) is designed to suit the sizes of the spring (4) and the release button (5).

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The claims defining the invention are as follows:

1. A compact disc (CD) insert-release system as a device comprising a release button, a storage tray, a spring, a clamp, a projection and a detent to perform operations of inserting said CD into said storage tray and to perform instant pop up of said CD over said clamps by pressing said release button which is placed in the centre of the stored said CD.
2. The compact disc (CD) insert - release system as a device of claim 1 wherein said release button comprising a lower and an upper enlarged ends is engaged to energise all arms of said spring.
- 10 3. The compact disc (CD) insert - release system as a device of claim 2 wherein said lower enlarged end of said release button is permanently held in the centre of all said clamps and said upper enlarged end is engaged to contract all said clamps during the movement down and then subsequently to release all said detents.
- 15 4. The compact disc (CD) insert - release system as a device of claim 1 wherein said storage tray comprise a core hole and said clamps.
5. The compact disc (CD) insert - release system as a device of claim 4 wherein said clamps comprises said detents where the total number of said detents is 3(three) or more.
- 20 6. The compact disc (CD) insert - release system as a device of claims 1 and 2 wherein said spring comprise said arms having push out said projections on each said arm where the total number of said projections is 3(three) or more.

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7. The compact disc (CD) insert - release system as a device of claims 2 and 4 wherein said core hole is arranged to suit the shapes and sizes of said spring and said release button.
8. A compact disc (CD) insert - release system as a device substantially as herein described with reference to the accompanying drawings.

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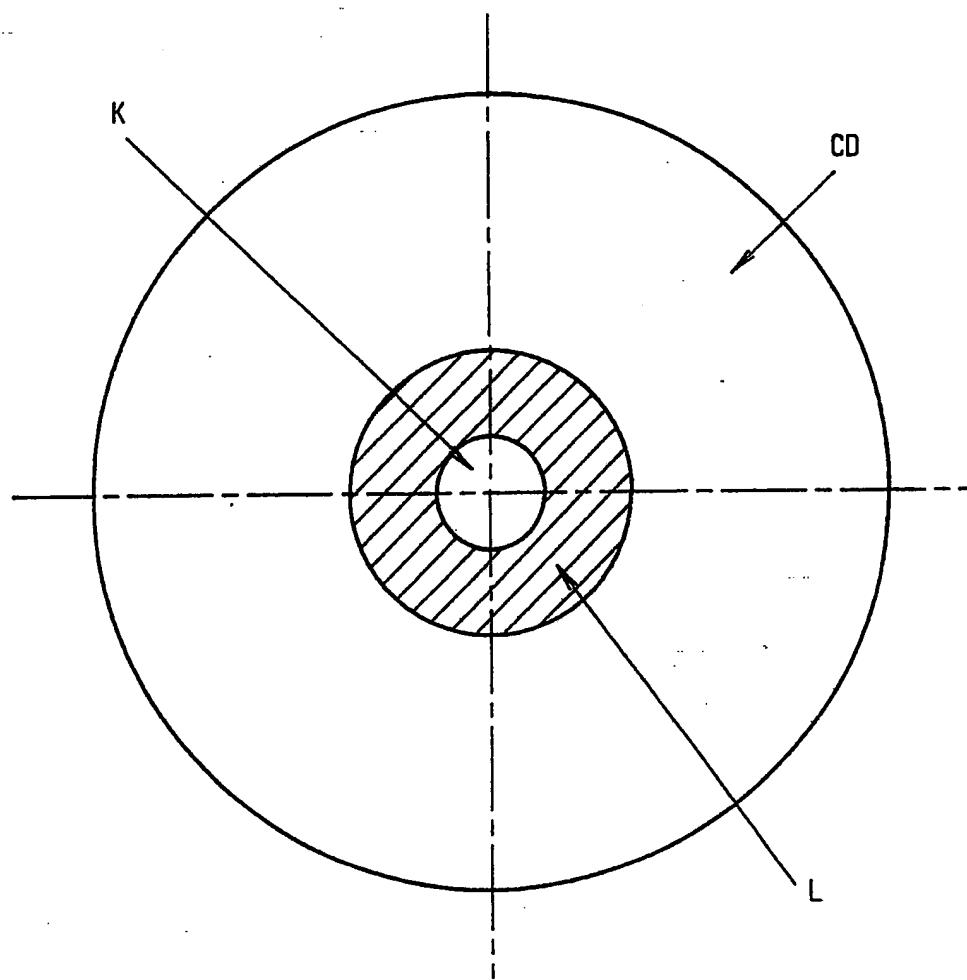
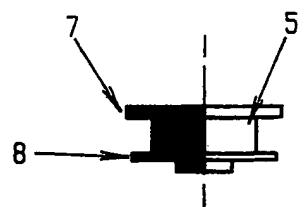


FIG.1

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SECTION A-A

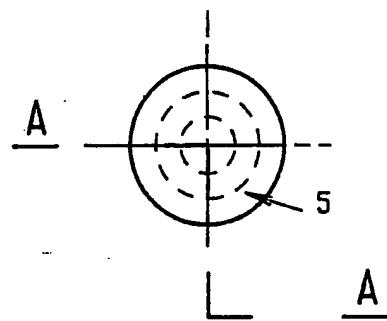
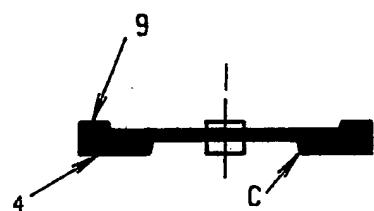


FIG. 2



SECTION A-A

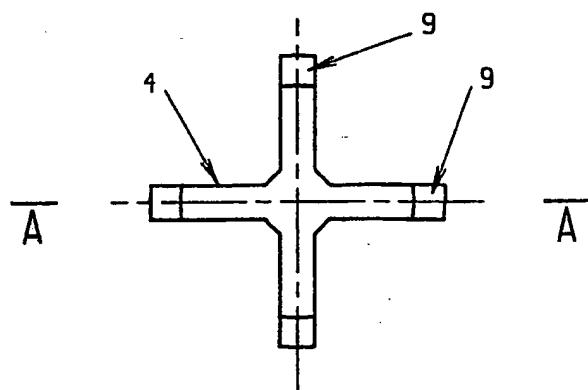


FIG. 3

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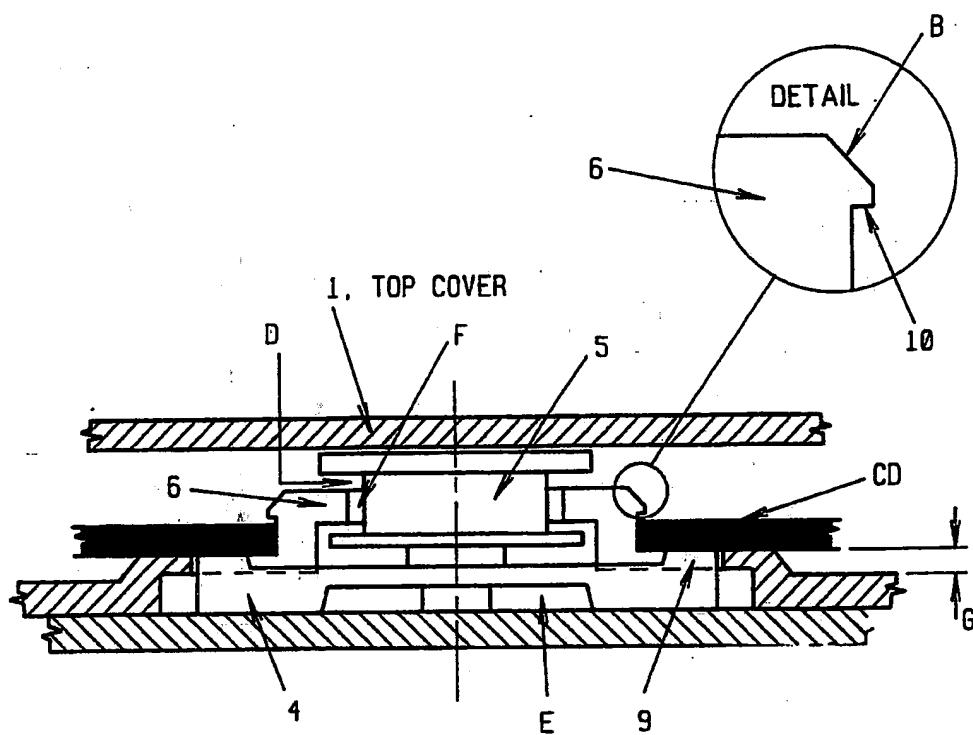


FIG. 4 SECTION

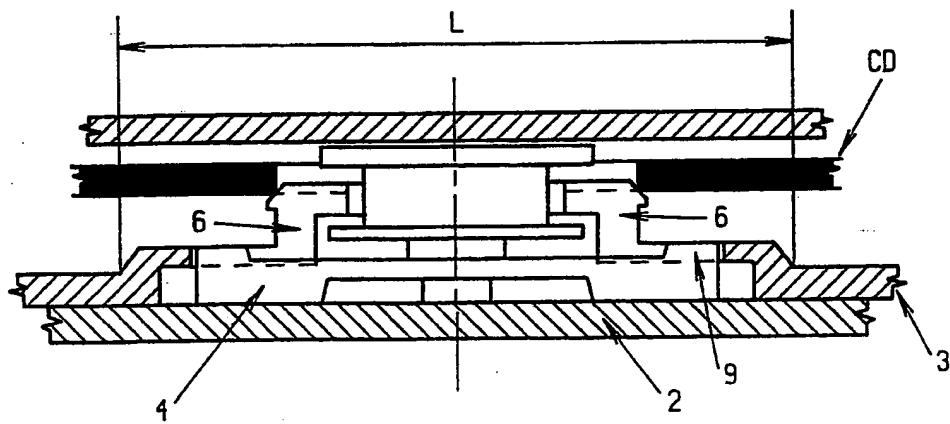


FIG. 5 SECTION

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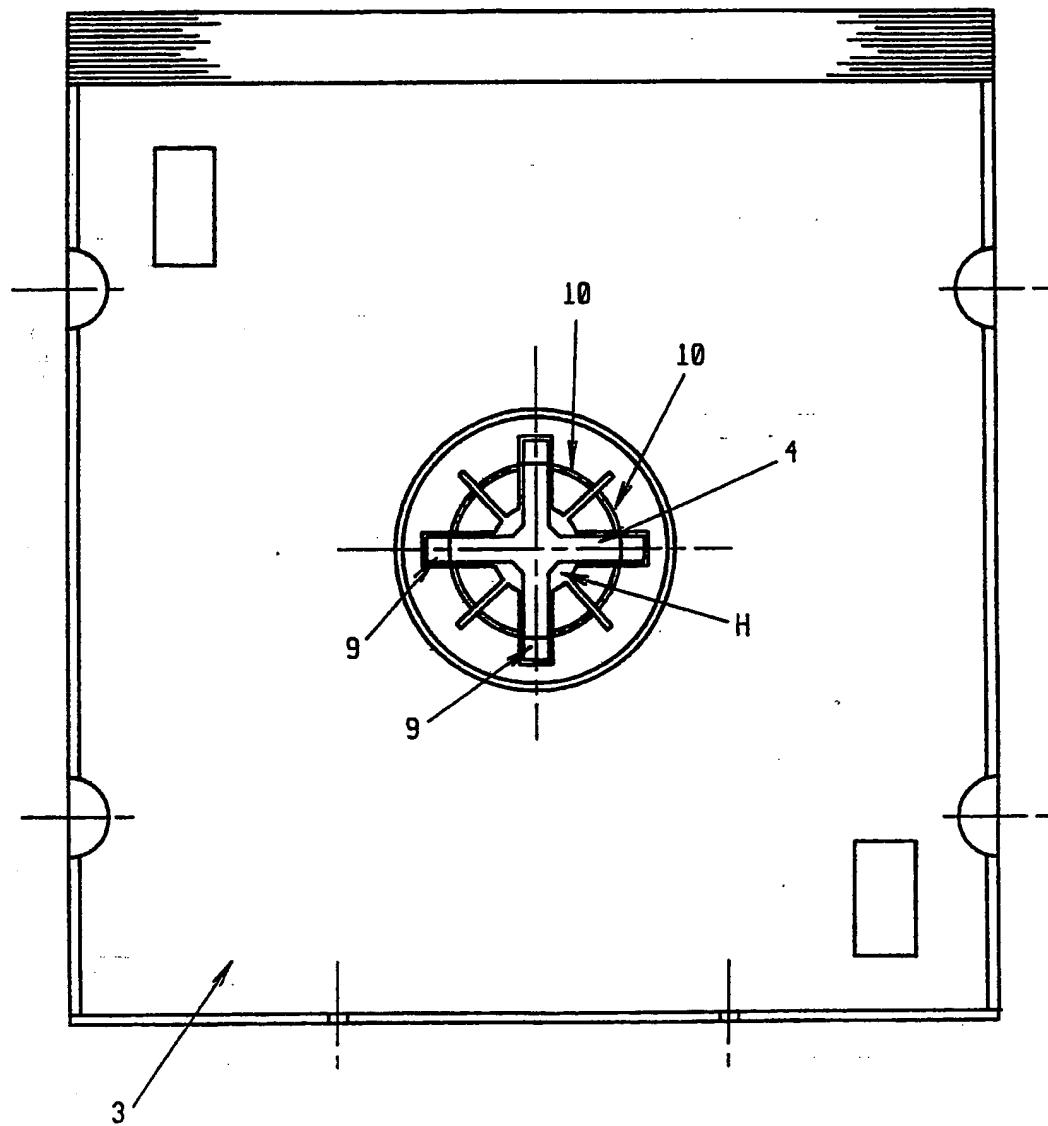
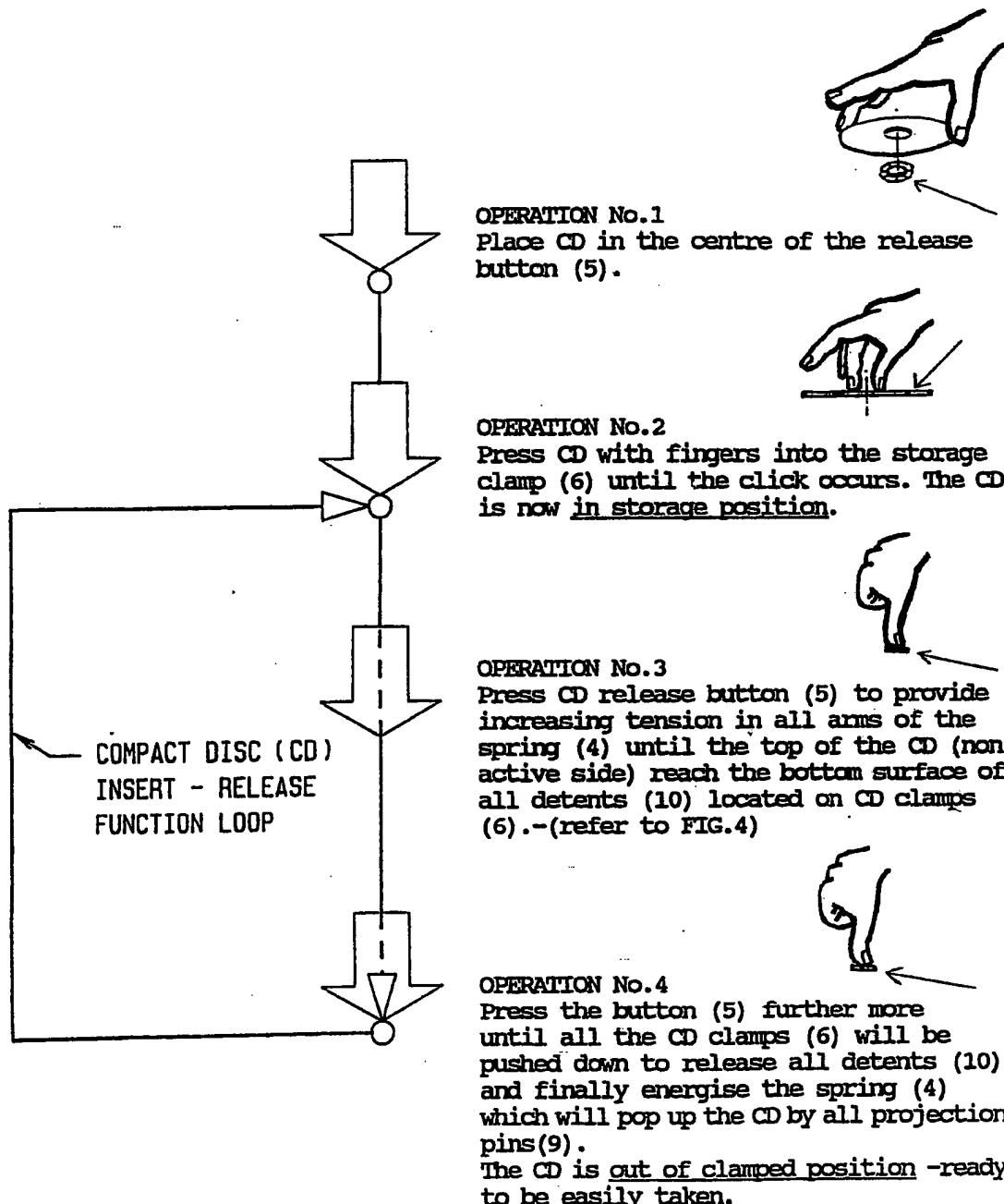


FIG. 6
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DIAGRAM OF OPERATION SEQUENCES

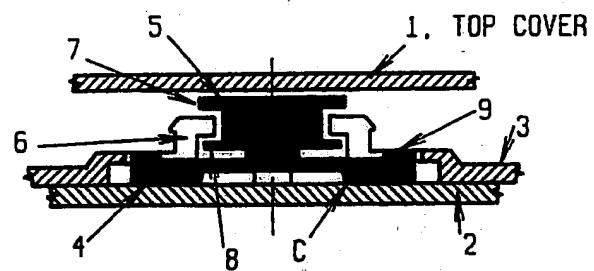
To store CD in the storage clamps (6) - go through operations No.1 and No.2.

To release CD from the storage clamp (6) - go through operations No.3 and No.4.

FIG. 7

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SECTION A-A

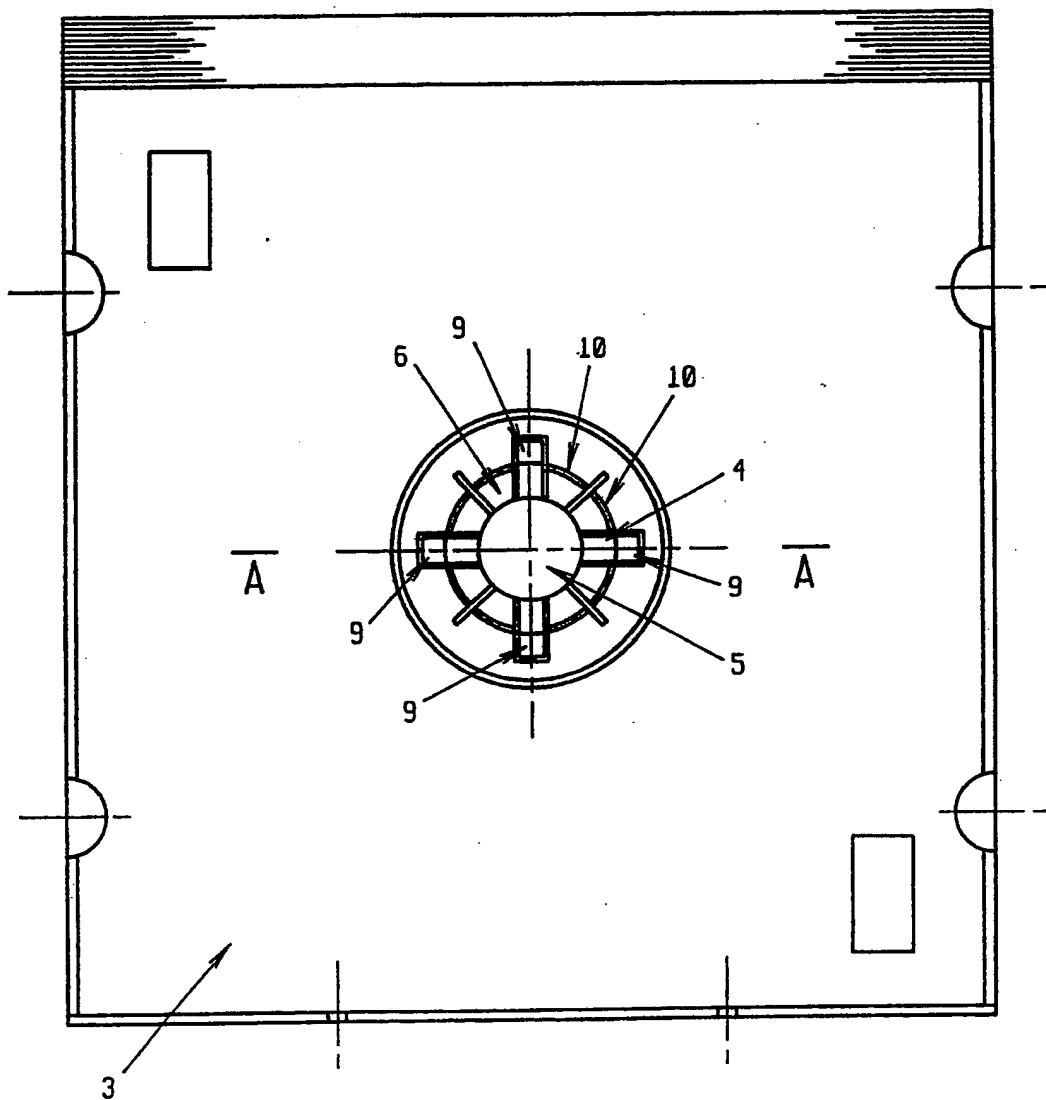


FIG.8

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A. CLASSIFICATION OF SUBJECT MATTER
Int. Cl.⁵ G11B 33/04 B65D 85/57

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC G11B 33/04, 23/03, B65D 85/57

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
AU: IPC as above.

Electronic data base consulted during the international search (name of data base, and where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to Claim No.
X	EP, A2, 429195 (WYATT) 29 May 1991 (29.05.91) See the whole document, especially column 4, lines 6-38 and Fig. 7.	(1-5, 8)
X	US,A, 4793479 (OTSUKA et al.) 27 December 1988 (27.12.88) See column 4, lines 3-65 and Fig. 6A.	(1,2,4,5,8)
A	Patents Abstracts of Japan, M-1043, page 21, JP,A, 02-205589 (Shoei PACK K.K.) 15 August 1990 (15.08.90)	

Further documents are listed
in the continuation of Box C.

See patent family annex.

* Special categories of cited documents :	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
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Date of the actual completion of the international search 16 October 1992 (16.10.92)	Date of mailing of the international search report 19 Oct 1992 (19.10.92)
Name and mailing address of the ISA/AU AUSTRALIAN PATENT OFFICE PO BOX 200 WODEN ACT 2606 AUSTRALIA Facsimile No. 06 2853929	Authorized officer J.W. THOMSON John Thomson Telephone No. (06) 2832214

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate of the relevant passages	Relevant to Claim No.
A	DE,A, 3715187 (HAGER) 24 November 1988 (24.11.88) See the whole document.	
A	DE,A, 3425579 (POLYGRAM GmbH) 16 January 1986 (16/01/86) See the whole document, especially pages 9 and 10 and Fig. 7.	

Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This international search report has not established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:

2. Claim Nos.: because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. Claims Nos.: 6 and 7 because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims

2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- The additional search fees were accompanied by the applicant's protest.
- No protest accompanied the payment of additional search fees.